

RESEARCH TWITTER

L. L. Hui, Gabriel M. Leung, Man-Yu Wong, T. H. Lam and C. M. Schooling. **"Small for Gestational Age and Age at Puberty: Evidence From Hong Kong's "Children of 1997" Birth Cohort."** *American Journal of Epidemiology*, 2012, 176(9): 785-93.

The predictive-adaptive response paradigm postulates that slow fetal growth advances puberty as a life-history strategy for reproductive success, when constraints on postnatal growth are minimal. The authors examined the association of birth weight for gestational age and small for gestational age (SGA) status (birth weight for gestational age <10th percentile, 6.9%) with clinically assessed age at onset of Tanner stage II in a non-Western developed population using interval-censored regression in 7,366 children (89% follow-up) from a population-representative Chinese birth cohort, "Children of 1997" in Hong Kong. Neither SGA status nor birth weight z score for gestational age was associated with age at onset of puberty, adjusted for sex, mother's place of birth, parental height, income, and parental education. Greater childhood height and linear growth were associated with younger age at onset of puberty. SGA status was associated with earlier puberty after adjustment for childhood height (time ratio = 0.984, 95% confidence interval: 0.972, 0.995) but later puberty after adjustment for linear growth (time ratio = 1.017, 95% confidence interval: 1.005, 1.030). SGA status was not associated with timing of puberty. However, the observation may be contextually specific depending on how other attributes, such as childhood growth, differ between SGA and other children.

Haixin Li, Alicia Beeghly-Fadiel, Wanqing Wen, Wei Lu, Yu-Tang Gao, Yong-Bing Xiang, Qiuyin Cai, Jirong Long, Jiajun Shi, Kexin Chen, Ying Zheng, Xiao Ou Shu and Wei Zheng. **"Gene-Environment Interactions for Breast Cancer Risk Among Chinese Women: A Report From the Shanghai Breast Cancer Genetics Study."** *American Journal of Epidemiology*, Advance Access, 10.1093/aje/kws238.

Genome-wide association studies have identified approximately 20 susceptibility loci for breast cancer. A cumulative genetic risk score (GRS) was constructed from 10 variants with replicated associations among participants of the Shanghai Breast Cancer Genetics Study (Shanghai, China, 1996–1998 and 2002–2005). Interactions between the GRS and 11 breast cancer risk factors were evaluated. Among the 6,408 study participants, no evidence of effect modification was found with the GRS for age at menarche, age at menopause, age at first live birth/parity, total months of breastfeeding, family history of breast cancer, history of benign breast disease, hormone replacement therapy, body mass index, waist/hip ratio, or regular physical activity. The effect of the GRS was least homogeneous by duration of menstruation; further analysis indicated a nominally significant interaction with one genetic variant. The mitochondrial ribosomal protein S30 gene (MRPS30) rs10941679 was associated with breast cancer risk only among women with more than 30 years of menstruation (odds ratio = 1.15, 95% confidence interval: 1.05, 1.26). Although this multiplicative interaction reached a nominal significance level ($P = 0.037$), it did not withstand correction for multiple comparisons. In conclusion, this study revealed no apparent interactions between genome-wide association study-identified genetic variants and breast cancer risk factors in the etiology of this common cancer.

Jian Zhang, Fei Yan, and Shenglan Tang. **"The Incoherence of China's National Health Development Strategies."** *American Journal of Public Health*, 2012, 102(12): e14-e16.

China ambitiously promised to provide safe, effective, and affordable health care services to all citizens. However, the national strategies for enhancing health remain patchy, and the policy frameworks to empower and inspire individuals and communities to pursue a healthy lifestyle are largely fragmented. The incoherency is well epitomized by China's failure to implement key parts of the Framework Convention on Tobacco Control treaty. We seek to advance constructive debate on the health care reform and national health development in China.

Bright I. Nwaru, Reija Klemetti, Huang Kun, Wang Hong, Shen Yuan, Zhuochun Wu, and Elina Hemminki. **"Maternal socio-economic indices for prenatal care research in rural China."** *European Journal of Public Health*, 2012, 22(6): 776-81.

This study constructed socio-economic status (SES) indices for prenatal care research and examined their relation to perinatal care and outcomes. It utilized data of 4364 rural women having recently given birth, collected by a cross-sectional survey in three rural Chinese provinces in 2007. Principal component analysis (PCA) was used to construct the SES indices and multilevel logistic regression was used to relate the indices to low birth weight, short exclusive breastfeeding (≤ 4 months), childbirth at the county or higher level health facility, caesarean section, inadequate prenatal care and no postnatal care. Three separate SES indices (wealth, occupational and educational indices) were obtained from the PCA analysis, capturing maternal, paternal and household SES characteristics. After adjusting for individual level factors, village and township wealth, higher levels of the indices were inversely associated with inadequate prenatal care. Higher occupational status was positively associated with short exclusive breastfeeding and childbirth at the county or higher level health facility, but inversely associated with no postnatal care. Higher educational status was positively associated with no postnatal care. This study concluded that the SES indices gave mostly varying results on their associations with perinatal care and outcomes, indicating that SES measures may be outcome-specific.

Jiun-Hau Huang, Yen-Yu Miao and Pei-Chun Kuo. **"Pandemic influenza H1N1 vaccination intention: psychosocial determinants and implications from a national survey, Taiwan."** *European Journal of Public Health*, 2012, 22(6): 796-801.

A national computer-assisted telephone interview survey using random digit dialing was conducted during 28–30 October 2009 among residents of Taiwan aged ≥ 15 years. Of the 1079 participants interviewed, 70.1% reported intention to receive pandemic influenza A/H1N1 (pH1N1) vaccination. Multivariate logistic regression analysis showed that participants who perceived pH1N1 in Taiwan to be much more severe than that in other countries [adjusted odds ratio (AOR) = 1.94; 95% confidence interval (CI) = 1.05–3.60], who agreed (AOR = 2.44; 95% CI = 1.30–4.58) or strongly agreed (AOR = 2.53; 95% CI = 1.38–4.65) that contracting pH1N1 would have a great impact on their daily life, who perceived pH1N1 vaccination to be very effective in preventing pH1N1 (AOR = 2.64; 95% CI = 1.61–4.33) and who considered receiving vaccination not very difficult (AOR = 8.97; 95% CI = 6.05–13.29) or not at all difficult (AOR = 30.72; 95% CI = 19.24–49.04) were more inclined towards getting vaccinated against pH1N1. This study concludes that these specific and modifiable health beliefs have practical implications for prevention and policy making, and highlight the importance of minimizing perceived barriers while convincing the public of the seriousness of the disease and effectiveness of vaccination when promoting vaccination programmes.

Hongjie Yu, Weizhong Yang, and Jay K. Varma. **"To Save Children's Lives, China Should Adopt An Initiative To Speed Introduction Of Pneumonia Vaccines."** *Health Affairs*, 2012, 31:112545-2553.

Despite rapid economic development, China has not yet incorporated into its national childhood immunization program vaccines against *Streptococcus pneumoniae* and *Haemophilus influenzae* type b. Both vaccines can prevent pneumonia, the leading infectious disease killer of young children in China. In contrast, the other World Health Organization member nations with the ten largest birth cohorts have included *H. influenzae* type b in their national childhood immunization programs, and many of the world's wealthiest and poorest countries have done the same with *S. pneumoniae*. In this article we review what is known about *S. pneumoniae* and *H. influenzae* type b in China, and we make recommendations for how to accelerate the use of vaccines against these pathogens in that country. We propose that China adopt a "Chinese Accelerated Vaccine Initiative" modeled after other successful global programs. This broad effort would marshal the

evidence and commitment needed to change vaccine policy, then develop and implement a plan for a sustainable, affordable supply of these and other new vaccines.

Zhanlian Feng, Chang Liu, Xinping Guan, and Vincent Mor. **"China's Rapidly Aging Population Creates Policy Challenges In Shaping A Viable Long-Term Care System."** *Health Affairs*, 2012, 31:122764-2773.

In China, formal long-term care services for the large aging population have increased to meet escalating demands as demographic shifts and socioeconomic changes have eroded traditional elder care. We analyze China's evolving long-term care landscape and trace major government policies and private-sector initiatives shaping it. Although home and community-based services remain spotty, institutional care is booming with little regulatory oversight. Chinese policy makers face mounting challenges overseeing the rapidly growing residential care sector, given the tension arising from policy inducements to further institutional growth, a weak regulatory framework, and the lack of enforcement capacity. We recommend addressing the following pressing policy issues: building a balanced system of services and avoiding an "institutional bias" that promotes rapid growth of elder care institutions over home or community-based care; strengthening regulatory oversight and quality assurance with information systems; and prioritizing education and training initiatives to grow a professionalized long-term care workforce.

Xianglan Zhang, Yu-Tang Gao, Gong Yang, Honglan Li, Qiuyin Cai, Yong-Bing Xiang, Bu-Tian Ji, Adrian A Franke, Wei Zheng¹ and Xiao-Ou Shu. **"Urinary isoflavonoids and risk of coronary heart disease."** *International Journal of Epidemiology*, 2012, 41 (5): 1367-75.

This study examined associations of urinary isoflavonoids, a biomarker of soy or soy isoflavone intake, with risk of CHD in a case-control study nested within two prospective cohort studies of Chinese adults in Shanghai. Cases were defined as subjects with no history of CHD at baseline who developed incident CHD during follow-up. Control subjects were randomly selected from those who remained free of CHD and matched to cases by sex, age, date and time of sample collection and antibiotic use. Baseline urinary isoflavonoids (daidzein, genistein, glycitein, equol, O-desmethylandolensin, dihydrodaidzein and dihydrogenistein) were compared between cases (n = 377) and control subjects (n = 753). Conditional logistic regression was used to evaluate the associations. It found that total urinary isoflavonoids were not associated with CHD in either women or men. However, urinary equol excretion showed a significant inverse association with CHD in women. The adjusted odds ratios (95% confidence intervals) for CHD across increasing quartiles of equol levels in women were 1 (reference), 0.61 (0.32, 1.15), 0.51 (0.26, 0.98) and 0.46 (0.24, 0.89) (P = 0.02 for trend). This study suggests that for the first time that equol, a bioactive metabolite of soy isoflavone daidzein, may be inversely associated with risk of CHD in women.

Tiffany Szu-Ting Fu, Chau-Shoun Lee, David Gunnell, Wen-Chung Lee, Andrew Tai-Ann Cheng. **"Changing trends in the prevalence of common mental disorders in Taiwan: a 20-year repeated cross-sectional survey."** *The Lancet*, 2012, 380(9854): 1649-61.

This study investigated whether the prevalence of common mental disorders (CMDs) changed over a 20-year period of industrialisation in Taiwan. It used the 12-item Chinese Health Questionnaire to assess mental status of Taiwanese adults in 1990, 1995, 2000, 2005, and 2010. Respondents with scores of 3 or higher were classified as having probable CMDs. It assessed trends of probable CMDs with the Cochran-Armitage test and their risk factors (sex, age, marital status, educational level, employment status, and physical health) with multivariable logistic regression. The trends were compared with national rates of unemployment, divorce, and suicide. It found that of 10 548 respondents, 9079 (86.1%) completed questionnaires. The prevalence of probable CMDs doubled from 11.5% in 1990 to 23.8% in 2010 (time trend p<0.001). Increases paralleled rises in national rates of unemployment, divorce, and suicide at all five timepoints. Significant risk factors for probable CMDs were female sex (adjusted odds ratio 1.6, 95% CI 1.4–1.8), 6 or fewer years of education

(1.3, 1.1—1.5), unemployment (1.4, 1.1—1.7), and poor physical health that limited daily activities (6.5, 5.4—8.0). When these factors were controlled for in multivariable models, the time trends remained significant ($p < 0.0001$). This study concluded that national rates of unemployment, divorce, and suicide increased in parallel with prevalence of probable CMDs in Taiwan. Clinical and social preventive measures both seem important during times of change to the economy and labour market.